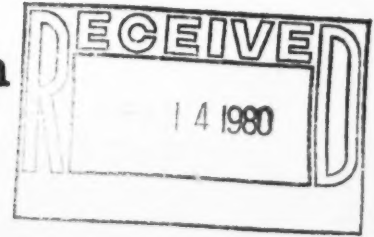


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Rates of Return on GNMA Securities:
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RATES OF RETURN ON GNMA SECURITIES: THE COST OF MORTGAGE FUNDS

Kenneth B. Dunn and John J. McConnell*

Abstract

This paper examines rates of return earned on GNMA securities over the period January 1971 through June 1978. We find that over this period the mean monthly return on GNMA's was greater than the mean return on long-term government bonds and slightly greater than the mean return on high-grade corporate bonds. However, in neither case was the difference statistically significant. Thus, based on this evidence, it is not possible to conclude that the cost of acquiring funds to finance single-family housing purchases through the GNMA program exceeded the cost of acquiring funds by the U.S. treasury or financially-strong corporations.

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I. Introduction

This paper examines rates of return earned on GNMA mortgage-backed securities over the period January 1, 1971 through June 30, 1978. The concept of rate of return earned on a security generally refers to the investor's perspective, but the concept can also be applied to the party on the other side of the transaction, i.e., the issuer of the security. In this case, the nominal issuer of the security is a mortgage company, a savings and loan association, or a mutual savings bank, but the true underlying issuers are the mortgagors who issue the loans that "back" the security. Thus, rates of return earned on GNMA securities represent the "cost" of financing house purchases through the GNMA program over the period examined.¹

This paper is motivated in part by papers and articles that have appeared in the academic and financial press concerning "yields" on GNMA securities. These publications note that the measured yields on GNMA securities have persistently exceeded measured yields not only on long-term government bonds, but also on Aaa-rated corporate bonds ([6], [7], [11], [12], [18]). This observation is puzzling because the default risk on GNMA securities is equivalent to that of treasury bonds and marginally less than that of Aaa-rated corporate debt. One implication that is often drawn from these yield comparisons is that the cost of acquiring funds in the capital market for the purchasers of single-family housing substantially exceeds the cost of acquiring funds not only by the Federal government, but also by financially-strong corporations. Thus, it is often concluded that purchasers

of single-family housing participate at a disadvantage in the capital market even when they are backed by the "full faith and credit" of the U.S. government. A second implication which is often implicit, but occasionally stated explicitly, is that GNMA securities have been and continue to be improperly priced by the capital market. For example, Curley and Guttentag [6] state:

It is obvious that the market price of a financial instrument is not its "true value" if the expected yield the buyer associates with that price has not been correctly calculated. This is generally the case with outstanding residential mortgages. It is only by accident that these mortgages are correctly priced, i.e., that the yield expected at the transaction price is the yield correctly implied by that price.

We believe that such conclusions are unjustified and arise because of a misinterpretation of what information is and is not contained in estimated ex ante yields on fixed-income securities.

There is another and, we believe, superior approach to drawing inferences about the relative pricing of alternative securities and, by implication, the relative "cost" of obtaining funds by alternative security issuers. If we specify an ex ante relationship between the returns on alternative securities and if we assume that, on average, expectations by market participants are realized (i.e., if we assume "rational" expectations obtain) we can use ex post data to test ex ante relationships.

Thus, this study has two primary purposes. The first is to clarify some aspects of computed "yields" on fixed income securities with particular emphasis on their application to GNMA securities. The second purpose is to compare the "cost" of obtaining funds through the GNMA program with the cost of obtaining funds by the U.S. government and by financially-strong corporations.

The following section contains a discussion of pitfalls encountered when ex ante yields are used to draw inferences about the pricing of GNMA's and other fixed-rate securities. Section 3 presents a relative pricing model for interest contingent claims. This model motivates the statistical analysis conducted in Sections 4 and 5. The final section contains a summary and some concluding remarks.

II. GNMA "Yields" and the Pricing of GNMA Securities

It is generally recognized that comparisons of "yields" among fixed income securities are likely to provide very little information about the relative prices of those securities. This is because the yield is a derived number. Given the price of a security and a set of future cash payments to be made on the security, it is always possible to compute a yield. It is not possible to go the other direction. That is, it is not possible to use a security's yield to determine what its price should be, except under very limited circumstances.²

First, if two securities have identical future cash flows in every period, then their prices should be identical. As a consequence, so should their ex ante yields. Unfortunately, in that situation, computation of the securities' yields is redundant, since their prices can be compared directly. Thus, we may conclude that two GNMA's with the same coupon interest rates, the same maturities, and issued on the same date should have the same yield. But that merely says that they should sell at the same price. We cannot compare the yield on the GNMA with that on a government or corporate bond and draw any conclusion about their relative prices unless the comparison securities also have identical future cash flow distributions (which they do not).

The second situation in which yields can be compared is when: (1) all future spot rates of interest are equal; (2) the future spot rates are known with certainty; and (3) the future cash flows to each security are known with certainty. If these three conditions hold, then the computed ex ante (and ex post) yields on all securities should be equal even though their prices are not.

However, even if the first two conditions are met, it would not be possible to draw any conclusions about GNMA prices based upon their yields because the future cash flows to GNMA's are not known with certainty. Underlying each GNMA security is a pool of mortgage loans. Each of these loans is callable at par immediately after issuance. Thus, a rational mortgagor will call his loan whenever the current market interest rate falls below the coupon rate on the loan. However, one additional peculiarity of GNMA securities is that the issuers of the underlying loans often call (or prepay) their loans when the market interest rate is above the coupon rate on their loans. These "suboptimal" loan prepayments represent an additional stochastic component of the cash flow stream. Thus, (except at maturity) the cash flow at the end of any future time period is uncertain.

To circumvent this problem, GNMA yields are customarily computed on the basis of "average" life rather than term-to-maturity. Because thirty-year maturity mortgage loans on residential property have, on average, been prepaid in twelve years, yields are computed under the assumption that all of the loans in the pool will be fully prepaid at the end of the twelfth year. This procedure represents at best an ad hoc approach to recognizing the uncertainty associated with future cash flows on GNMA's.

In an attempt to provide greater precision to the computation of GNMA yields, Curley and Guttentag [6] have used historical data to estimate the average fraction of mortgage loans prepaid in each policy year after issuance. These fractions represent point estimates of the probability of loan repayment in each year after issuance. Using these point estimates, they compute a yield to expected maturity. While this procedure is an imaginative extension of the customary procedure used to compute GNMA yields, it too is unlikely to be useful in providing information about GNMA prices or the relative "cost" of mortgage funds.

The problem with the Curley and Guttentag approach is that it imputes a set of expectations to market participants. Because the imputed distribution may differ from the market's estimated distribution, it is not possible to conclude that the market's expected yield is greater or less than the expected yield on some other security, nor is it possible to conclude that the market has "improperly" priced GNMA's relative to other securities. To see this point, consider a standard one-period example. A security is issued at time 0. At time 1, the security will provide some random payoff. Based on some set of expectations about the time 1 distribution of cash payoffs, capital market participants will determine a time 0 price for the security. We may observe the security's price, but we cannot observe investors' expectations about the time 1 distribution of cash flows.

If we were to impute a time 1 distribution of cash flows, we could then impute an expected return on the security. However, on the basis of this expected return we may not conclude that the market has improperly priced this security relative to any other security. Nor is it possible to conclude

that the market's expected return on this security is higher than the expected return on any other security. In essence, either conclusion implies that market participants have improperly assessed the distribution of future cash flows. Unfortunately, it is not possible to distinguish between that possibility and the possibility that the imputed distribution of cash flows is not the "correct" one. Thus, even in a single-period setting (in which the term structure problem is irrelevant) the procedure used by Curley and Guttentag cannot distinguish between these two possibilities.

However, there is an alternative approach that will allow us to draw conclusions about the prices of GNMA's and about the relative "cost" of mortgage funds. If we assume that, conditional upon the set of information relevant to the pricing of these securities, capital market participants form unbiased assessments of the future returns distribution, and if we specify a testable relationship between returns on GNMA securities and the returns on other securities, then we can use ex post data to test ex ante relationships. This is the procedure typically used in tests of the capital asset pricing model with stock market data ([4], [5], [9], [10]) and it is the one that we adopt here.

III. The Model

In order to test hypotheses about the pricing of GNMA securities, it is necessary to have a general model for the pricing of fixed-income or interest contingent securities. Such a model has been developed by Cox, Ingersoll and Ross [8]. With their model, if we assume that: (1) the instantaneous expected returns on GNMA securities, U.S. treasury bonds, and Aaa-rated corporate bonds are dependent only upon the current rate of interest for instantaneous risk-free borrowing and lending;³ (2) all three securities are default-free; (3) the interest rate elasticity is the same for all three securities; and (4) the stochastic "prepayment" cash flows on GNMA's are uncorrelated with the instantaneous rate of interest and all other fundamental economic factors, it can be shown that the instantaneous expected rate of return on a GNMA security is equal to the instantaneous expected rate of return on a U.S. treasury bond and/or an Aaa-rated corporate bond.

Some discussion of our assumptions is appropriate. Cox, Ingersoll and Ross [8] develop their model under the first assumptions as a special case. The second assumption is an approximation. While U.S. treasury bonds and GNMA's are default-free, the same is not true for Aaa-corporate bonds. Although the probability of default for high-grade bonds is small, it is, nevertheless, positive. The third assumption says that, for a given change in the rate of instantaneous risk-free borrowing and lending, the prices of the three securities will change by equal proportional amounts. The last assumption is equivalent to the assumption that the "risk" associated with the stochastic prepayment cash flows on GNMA's is fully diversifiable or, within the capital asset pricing model framework, it is nonsystematic risk.

As a consequence, investors cannot expect to be compensated to bearing this component of total risk.

Undoubtedly these assumptions do not all obtain exactly in practice. However, they do permit us to specify potentially refutable hypotheses about the pricing (i.e., returns) of GNMA's relative to those of the comparison securities. Furthermore, the model on which the hypotheses are based is a rigorously derived equilibrium model for the pricing of interest dependent claims. The question of whether or not the model adequately describes the pricing of fixed-rate securities (and whether or not our assumptions grossly violate the "true" characteristics of these securities) must, of course, be answered by the data.

The hypotheses to be tested can be summarized algebraically as

$$\tilde{R}_{Gt} = \tilde{R}_{Tt} + \tilde{\epsilon}_{Gt}$$

and

$$\tilde{R}_{Gt} = \tilde{R}_{Ct} + \tilde{\epsilon}'_{Gt}$$

where tildes represent random variables; R_{Gt} , R_{Tt} , and R_{Ct} are the instantaneous returns on GNMA securities, treasury bonds, and Aaa-rated corporate bonds, respectively, in time period t ; and ϵ_{Gt} and ϵ'_{Gt} are random disturbances which represent the unexpected return on the GNMA security in time period t .

Then taking expectations

$$E(R_{Gt} \mid \phi_{t-1}) = E(R_{Tt} \mid \phi_{t-1}) \quad (3)$$

and

$$E(R_{Gt} \mid \phi_{t-1}) = E(R_{Ct} \mid \phi_{t-1}) \quad (4)$$

where $E(\cdot)$ is the expectations operator and ϕ_{t-1} is the set of information available at time $t-1$.

In the following two sections we test the relationships expressed in (3) and (4). It should be noted that we are testing the joint hypothesis that: (1) contingent upon the set of information relevant to the pricing of these securities, the market properly anticipates the distribution of future cash flows to them; and (2) the market prices these securities according to equations (3) and (4).

IV. Data

To test our hypotheses, we constructed several alternative monthly rate of return indexes for eight percent GNMA securities over the period January 1, 1971 through June 30, 1978. The return on a GNMA security is composed of four elements: (1) the change in the security's price; (2) the coupon interest payment; (3) the scheduled principal repayment; and (4) the unscheduled or stochastic principal repayment.

IV. A. Principal and Interest Payments

When a GNMA security is issued, the issuer records the total dollar amounts of the outstanding balances of the loans in the pool underlying the security. Each month thereafter, the issuer computes the dollar amount of principal repaid on the underlying loans and sums these amounts over time. Each month this sum is subtracted from the original balance and the difference is divided by the original balance. This fraction is called the paydown factor on the pool. Each month the security issuer is required to report the paydown factor to the Government National Mortgage Association.

Given the paydown factors for the beginning and end of any month (or equivalently, the beginning factors for two consecutive months) we can compute the total principal payments on the loans in the pool during the month as

$$P_{it} = (F_{it}^b - F_{it}^e) B_{oi} \quad (5)$$

where P_{it} is the dollar amount of principal repaid on GNMA security i during month t ; F_{it}^b is the paydown factor for security i at the beginning of month t ; F_{it}^e is the paydown factor for security i at the end of month t (Note: $F_{i,t}^b = F_{i,t-1}^e$); and B_{oi} is the total original principal balance of the mortgage loans "backing" GNMA security i .

Given the monthly paydown factors and the annual coupon interest rate on the security, we can also compute the total dollar amount of interest paid on the security during the month as

$$I_{it} = (F_{it}^b \cdot B_{oi}) \frac{C_i}{12} \quad (6)$$

where I_{it} is the total dollar amount of interest paid on security i in month t and C_i is the annual interest rate on the security.⁴

In computing the rates of return in the GNMA securities we used two sources of paydown factors.

The bulk of the paydown factors were made available to us on a computer tape by Loeb, Rhoades & Co. This tape contains monthly paydown factors for over 25,000 individual pools issued over the period February 1970 through June 1978. Of this total approximately 9,400 were eight percent securities. It was this subset of eight percent pools that we used in our computations.

Although the computer tape included paydown information on securities issued as early as February 1970, the actual paydown factors did not begin

until February 1972 because Loeb, Rhoades did not record the information prior to that date.

We supplemented the computer tape with data provided to us by National Homes Acceptance Corporation. National Homes provided us with the monthly balances for twelve 8 percent pools issued between December 1, 1970 and January 30, 1971. From these data we computed monthly paydown factors for the period January 1, 1971 to February 28, 1972 for each of the twelve pools.

By combining these two data sets we constructed a continuous series of monthly paydown factors for the period January 1, 1971 to June 30, 1978. It should be noted that conclusions about rates of return on GNMA's over the period January 1971 to February 1972 are dependent upon the assumption that the twelve pools obtained from National Homes Acceptance are representative of all outstanding GNMA securities over that period.

IV. B. Market Prices

The second ingredient needed to compute rates of return are monthly market prices for GNMA securities. In this case, three data sources were used.

For the period August 30, 1974 through June 30, 1978 month-end prices for eight percent GNMA's were collected from the Wall Street Journal [20]. Prior to that time the Journal did not report GNMA prices. However, Salomon Brothers' Yield Book [1] does contain "first-of-month" yields on GNMA eight percent securities beginning with December 1, 1971. These yields were computed based on the "consensus" market price at the beginning of each month and with the assumption of a twelve-year average

life for GNMA's. By reversing the procedure used by Salomon Brothers to obtain yields, we were able to estimate market prices over the period December 1, 1971 through July 30, 1974.

For the period January 1, 1971 through November 30, 1971 we estimated market prices from a weekly yield series computed by Merrill, Lynch. This series used Friday prices to compute weekly yields. Again we reversed the process used to obtain yields to estimate market prices. We used the week-end price closest to each month-end as an estimate of the month-end price. As with the paydown factor data, the earlier observations in this series may be less reliable than the more recent ones.

By combining these three price series we constructed a continuous price series over the period January 1, 1971 through June 30, 1978.⁵

IV. C. Monthly Rates of Return

With the paydown factor and price data described above we computed monthly rates of return on each individual eight percent GNMA security for which we had paydown factor information as

$$R_{it} = \frac{(M_t^e \cdot F_{it}^e) + (F_{it}^b \cdot \frac{.08}{12}) + (F_{it}^b - F_{it}^e) - (M_t^b \cdot F_{it}^b)}{M_t^b \cdot F_{it}^b} \quad (7)$$

where R_{it} is the rate of return on GNMA security i in month t ; M_t^b is the market price of eight percent GNMA securities at the beginning of month t expressed as a fraction of the dollar amount of the principal balances of the loans in the pool (for example, a price of .955 means that the buyer of a security would be required to pay \$95.50 for each one hundred dollars of unpaid principal); M_t^e is the market price of eight percent GNMA's at the

end of month t (Note: $M_t^b = M_{t-1}^e$); and other terms are as defined above. In equation (7), the first and last terms on the right-hand-side combined, represent the change in the market price of the security; the second term represents the interest payment; and the third term represents the total principal payment (i.e., both the scheduled and unscheduled principal payment) during month t .

A rate of return was computed for each month for each of the approximately 9,400 eight percent securities if a paydown factor was available for the beginning and end of the relevant month. If an individual monthly factor for a specific pool was missing from the tape, then no rate of return was computed for that specific month for that specific pool.

The rate of return series for the individual securities were combined to construct four different rate of return indexes for eight percent GNMA securities over the period January 1, 1971 through June 30, 1978: (1) an equally-weighted index using all monthly returns for all securities; (2) a value-weighted index using all monthly returns for all securities; (3) a "new issues" equally-weighted index using only returns computed for the individual securities for the first fourteen months they were outstanding; and (4) a "new issues" value-weighted index using only returns computed for the individual securities for the first fourteen months after the date of issue.

Equally-weighted and value-weighted indexes were constructed because each embodies a different assumption about representative security performance. The "new issue" indexes were computed because the bulk of the total dollar volume of transactions in GNMA securities is composed of

relatively new GNMA securities. As a consequence, the observed market prices may be more representative of the value of "new" issues than of the entire GNMA market. If the "true" market values of "old" and "new" securities differ, then using current market prices in conjunction with paydown factors on "old" pools may give a distorted picture of the rate of return experience of GNMA securities.⁶

Monthly rates of return on long-term government bonds and Aaa-rated corporate bonds were made available to us by Roger Ibbotson. The procedure used to construct these monthly return series is described in [13] and [14].⁷

V. Results

V.A. Preliminary Analysis

Table 1 contains the arithmetic mean, standard deviation, and studentized range for the monthly returns, along with the maximum and minimum monthly return, for each of the four GNMA indexes, the government bond index, and the corporate bond index over the period January 1971 through June 1978 (months 1-90) and the period July 1973 through June 1978 (months 31-90). The 60 month subperiod was considered separately because, as we discussed above, the data for the earlier months may be less reliable than those for the latter months. Table 2 contains correlation coefficients among the six returns series.

As the two tables indicate, the four GNMA series are virtually indistinguishable. The largest difference in mean returns across the four indexes is .0001, while the largest difference in standard deviations is .00003. Furthermore, each of the correlation coefficients among the GNMA indexes is

in excess of .99. These results indicate that conclusions obtained with any one of the GNMA indexes will be equivalent to those obtained with any other. In subsequent analysis, we present results for the equally-weighted index only.⁸

Comparison of the results for the GNMA's with those for government and corporate bonds, indicates that, over both the full 90 month interval and the 60 month subperiod, the mean monthly return on the GNMA's did, in fact, exceed the mean return of the two comparison securities. Likewise for the full 90-month period the standard deviation of GNMA returns exceeded that of both government and corporate bonds. Over the last 60 months the standard deviation of monthly returns on GNMA's slightly exceeded the standard deviation of monthly returns on government bonds but it was less than the standard deviation of corporate bond returns.

Examination of Table 2 indicates that the correlation coefficients among all the series were significant at the .05 level and that the GNMA returns were slightly more highly correlated with those of corporate bonds than with those of government bonds.

Finally, based on the studentized ranges for the various returns series, it is not possible to reject the hypothesis that the monthly returns on each are distributed normally. This result permits us to conduct additional statistical tests which are based on the assumption that the returns of the various securities are normally distributed.

TABLE 1
SUMMARY STATISTICS FOR MONTHLY RATES OF RETURN ON GNMA
SECURITIES, GOVERNMENT BONDS, AND Aaa-RATED CORPORATE BONDS

	<u>Months^a</u>	<u>Arithmetic Mean</u>	<u>Standard Deviation</u>	<u>Maximum</u>	<u>Minimum</u>	<u>Studentized Range</u>
1-A.	GNMA Equally-weighted Index (all data)					
	1-90	.00558	.01836	.0634	-.0336	5.446
	31-90	.00538	.02097	.0634	-.0336	4.769
1-B.	GNMA Value-weighted index (all data)					
	1-90	.00557	.01837	.0634	-.0372	5.476
	31-90	.00538	.02097	.0634	-.0372	4.797
1-C.	GNMA New-Issues Equally-weighted Index (14 months only)					
	1-90	.00552	.01839	.0633	-.0373	5.470
	31-90	.00528	.02100	.0633	-.0373	4.790
1-D.	GNMA New-Issues Value-weighted Index (14 months only)					
	1-90	.00552	.01839	.0633	-.0341	5.470
	31-90	.00528	.02100	.0633	-.0341	4.790
1-E.	Long-Term Government Bonds					
	1-90	.00494	.02047	.0526	-.0468	4.856
	31-90	.00482	.02024	.0489	-.0433	4.555
1-F.	Long-Term Aaa Corporate Bonds					
	1-90	.00546	.02221	.0596	-.0476	4.827
	31-90	.00523	.02370	.0596	-.0476	4.523

^a <u>Months</u>	<u>Time period</u>
1-90	1/1971-6/1978
31-90	7/1973-6/1978

TABLE 2
CORRELATIONS AMONG MONTHLY RATE OF RETURN INDEXES: MONTHS 1-90

<u>SECURITY</u>	<u>CORRELATIONS^a</u>					
	<u>SECURITY</u>					
	<u>EW</u>	<u>VW</u>	<u>NEW</u>	<u>NVW</u>	<u>LTG</u>	<u>LTC</u>
EW	1.00					
VW	.99	1.00				
NEW	.99	.99	1.00			
NVW	.99	.99	.99	1.00		
LTG	.75	.75	.75	.75	1.00	
LTC	.83	.83	.83	.83	.85	1.00

Definitions:

EW = Equally-weighted GNMA Index (all data)
 VW = Value-weighted GNMA Index (all data)
 NEW = New-issues Equally-weighted GNMA Index
 NVW = New-issues Value-weighted GNMA Index
 LTG = Long-term Government Bonds
 LTC = Long-term Corporate Bonds

^aAll coefficients are significant at the .05 level.

V.B. Tests of Significance

Table 3 contains the results of two statistical tests of equations (3) and (4).

The first is the standard t-test of the difference between two sample means. With either a two-tailed test or one-tailed test, it is not possible to reject the hypothesis that the mean return on GNMA securities was equal to the mean return on government bonds over the two time intervals considered at the .10 level of significance. Examination of the t-values for the corporate bond comparisons yields similar conclusions. For neither the full 90 month interval nor for the 60 month subperiod is it possible to reject the hypothesis that the mean return on GNMA's was equal to the mean return on Aaa-rated corporate bonds at .10 level. This is true regardless of whether a two-tailed or one-tailed test is considered.⁹

The results of the second test are presented in Column 5. Depending upon the time interval considered, we determined the number of months out of 90 or 60 that the GNMA return exceeded the government (corporate) bond return. For government bonds, these numbers were 50/90 and 34/60; for corporates they were 45/90 and 28/60, respectively, for the two time periods. Then based upon a binomial distribution with a mean of .5, we computed a z-statistic to determine if these numbers were significantly different from 45 or from 30.

At the .10 level of significance, with either a two-tailed or one-tailed test, we cannot reject the hypothesis that, for any month, the probability of the GNMA return exceeding the government (corporate) bond return

TABLE 3

COMPARISON OF RETURNS ON GNMA SECURITIES WITH RETURNS ON GOVERNMENT BONDS AND Aaa CORPORATE BONDS

	Months	Difference in Mean Monthly Returns (t-statistic) ^b	Maximum Net Monthly Return	Minimum Net Monthly Return	Number of Positive Net Returns (Z-statistic) ^c
3-A	Monthly Returns on GNMA's less Returns on Government Bonds ^a				
	1-90	.00064 (.438)	.0345	-.0497	50 (1.054)
	31-90	.00056 (.306)	.027	-.0497	34 (1.0328)
3-B	Monthly Returns on GNMA's less Returns on Corporate Bonds				
	1-90	.00012 (.321)	.0444	-.0465	45 (.000)
	31-90	.00015 (.088)	.0174	-.0465	28 (-.516)

^aComputed with GNMA Equally-weighted Index (all data)

$$^b \text{Computed as } t = \frac{\bar{R}_g - \bar{R}_k}{\sqrt{S_g^2 + S_k^2 - 2r_{gk}S_gS_k} / n}$$

where

 $\bar{R}_g(\bar{R}_k)$ = arithmetic mean monthly return on GNMA (comparison) security, $S_g(S_k)$ = standard deviation of monthly return on GNMA (comparison) security, r_{gk} = correlation coefficient between monthly return on GNMA's and the comparison security. $n = 90$

$$^c \text{Computed as } Z = \frac{d - np}{S_d}$$

where

 $p = .50$ $n = 90$ d = number of positive net returns S_d = standard deviation of binomial distribution with $p = .50$ and $n = 90$.

was equal to the probability of the government (corporate) bond return exceeding the GNMA return. Equivalently stated, we cannot reject the hypothesis that, for any given month, the probability that the return on a GNMA security will be greater (less) than the return on a long-term government or Aaa corporate bond is .5.

Thus, at traditional levels of confidence, we cannot reject the joint hypothesis that the market properly assessed the distribution of cash flows to GNMA securities and that it priced them according to equations (3) and (4). As a consequence, we cannot conclude that the market improperly priced GNMA securities over the interval January 1971 through June 1978. Nor can we conclude that the cost of acquiring funds to finance single-family housing through the GNMA program exceeded the cost of acquiring funds by the U.S. government or financially-strong corporations.

VI. Conclusion

In this paper we test the joint hypothesis that: (1) contingent upon the set of relevant information, the market properly anticipated the distribution of returns to GNMA securities over the period January 1971 through June 1978 and; (2) that it priced them to earn the same expected returns as long-term treasury bonds and/or Aaa-rated corporate bonds. At traditional levels of significance it is not possible to conclude that the returns on GNMA's were different from the returns on either of the two comparison securities. As a consequence, we cannot conclude that the cost of acquiring funds to finance single-family housing through the GNMA program exceeded the cost of acquiring funds by the U.S. government or by financially-strong corporations.

It is true, however, that the mean return on GNMA's over the period examined not only exceeded the mean return on long-term government bonds, but it also was slightly greater than the mean return on high-grade corporate bonds. The t-statistics indicate that there is a high probability that this result is due entirely to chance. Another possible explanation is that the relative pricing model posited does not adequately describe the relationship among the returns on GNMA's and other securities. For example, it is possible that the stochastic prepayments on GNMA's are correlated with some other (unknown) economic factor not incorporated in the model. Addressing that possibility requires the development of a more complete model for the pricing of GNMA securities. Further refinements in the general model for the pricing of interest contingent claims developed by Cox, Ingersoll and Ross [8] may provide the basis for such a model. In the meantime, it is not possible to conclude that the purchasers of single-family housing participate at a disadvantage in the capital markets relative to the U.S. government or financially-strong corporations. It is our hope that these results will be useful to those individuals responsible for designing and managing federally-sponsored mortgage loan programs.

FOOTNOTES

¹ Extensive discussions of the institutional characteristics of the GNMA security are available in [17] and [19].

² Brealey [3] makes this same point in his discussion of Curley and Guttentag [6].

³ A more precise statement of this assumption is that the state of the world is completely specified by the level of the current rate of interest for instantaneous risk-free borrowing and lending and, therefore, all relevant uncertainty is completely summarized by the stochastic behavior of the spot interest rate.

⁴ The coupon interest rate on the underlying mortgage loans is one-half percent greater than the coupon rate on the GNMA security. The one-half percent difference represents the "administration" fee received by the loan "servicer" and the insurance premium received by the Government National Mortgage Association. McConnell [15], [16] demonstrates that the cost of a mortgage loan can be divided into the cost of originating and servicing the loan and the cost of acquiring funds in the capital market. Here we are concerned only with the cost of acquiring funds.

⁵ After a lengthy search of possible sources we were unable to discover market prices or yield data prior to December 1970.

⁶ A more complete description of the way in which each index was constructed is available from the authors.

⁷ The returns series reported in [13] end in 1974. Roger Ibbotsen provided us with updated data through December 1978. We acknowledge his assistance with gratitude.

⁸ We did carry out the tests with all four GNMA indexes. Because the results were virtually indistinguishable regardless of the index used, we report only those for the equally-weighted index constructed with all data.

⁹ These results are qualitatively similar to those reported by Bildersee [2] in his comprehensive study of U.S. agency bonds (which did not include GNMA securities). Using data over the period 1965 through 1973, he reported that, although *ex ante* yields on long-term agency bonds significantly exceeded yields on long-term treasury bonds, their mean monthly returns were indistinguishable. In fact, in several instances mean holding period returns on treasury bonds were actually greater than those on the agency bonds.

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WORKING PAPER NO. 33
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SECOND MORTGAGE SURVEY, 1979

Richard L. Peterson and Debra A. Drecnik*

Abstract

Second mortgage lending has grown rapidly in recent years as inflation has increased homeowner equity rapidly at the same time that creditors' protections have been eroded on many other types of consumer loans. The burgeoning growth in the second mortgage market has also kindled substantial interest in it. Thus, the National Second Mortgage Association (NSMA) commenced annual surveys of its members to learn more about the operations of the second mortgage market.

Only limited data were obtained in the 1978 survey. Thus, the NSMA collaborated with the Credit Research Center in 1979 to design a questionnaire and conduct a survey that would provide more comprehensive data on the second mortgage lending.

This study reports on major findings of that survey. Major findings were:

(1) Second mortgage lenders are experiencing extremely rapid growth in their credit outstanding. At year-end 1978, 45 NSMA members alone held \$4 billion in second mortgages outstanding.

(2) Secondary market transactions are not uncommon in second mortgage lending but the majority of second mortgages are held by the originators.

*The authors are, respectively, Senior Research Scholar and Research Assistant, Credit Research Center, Krannert Graduate School of Management. This survey was prepared in cooperation with Robert W. Johnson and with the National Second Mortgage Association. However, all opinions expressed herein are the sole responsibility of the authors.

(3) New second mortgages offered by most lenders had average maturities of six years, average homeowners equity of slightly over 20 percent, and average sizes ranging from slightly over \$1,000 to over \$27,000, depending on the institution.

(4) Losses on second mortgage loan portfolios were quite low, but delinquency rates were not.

(5) Second mortgage lenders were highly leveraged institutions that generally found their second mortgage lending to be quite profitable. They were profitable in spite of the fact that gross interest earnings averaged below 14.8 percent of average receivables.

(6) The overwhelming majority of second mortgage loans made by survey respondents were made to households, not businesses. Finally,

(7) The financial situation of second mortgage lenders varied substantially with the size of the lenders' second mortgage portfolio. For instance, the smallest lenders were the least leveraged and paid the highest rates to borrow, while the largest lenders made the smallest loans and paid the most to borrow.

The survey presents both aggregate results and results for each size group of lender for all items surveyed. Within each size group, data are presented to show the highest, lowest, median, and average values for each item of information.

SECOND MORTGAGE SURVEY, 1979

Richard L. Peterson and Debra A. Drecnik

I. Background

Because inflation has caused the market value of household equity to increase rapidly in recent years, many consumers are in a position to use the equity in their homes as collateral for loans. At the same time, rising costs of funds and operations, coupled with rate ceilings and restrictions on creditors' remedies have caused lenders to seek ways to make relatively large consumer loans at moderate rates, without taking excessive risk.

By pledging household equity under a second mortgage, consumers have found that they can borrow sufficient funds to meet their cash needs during inflationary times. Also, second mortgage loans provide one way for lenders to extend relatively large loans with low risks of default. Thus, second mortgage lending has grown rapidly in popularity with both borrowers and lenders in recent years.

In spite of its growth, there is a paucity of statistics on the nature and operations of the second mortgage market. Very little has been known about the characteristics of second mortgage instruments (their terms, sizes, and equity requirements), their delinquency and loss performance, and the nature and size of primary and secondary markets for second mortgages.

The National Second Mortgage Association (NSMA) has attempted to fill gaps in this information by asking all of its members to complete a survey describing their operations in the second mortgage markets for the business year 1978. A similar survey was conducted in 1978 for the business year 1977; however, only a limited number of useful responses to a narrow spectrum of questions were obtained in that 1977 survey. Consequently, the NSMA entered into a cooperative arrangement with the Credit Research Center (CRC) of Purdue University to undertake a survey of its members during the last half of 1979.

CRC worked with the NSMA to develop a questionnaire in the spring of 1979. At mid-year, 107 questionnaires were mailed out. Two were undeliverable. Forty-five were completed. The number completed was nearly twice as great as in 1978. This fact, plus the fact that more detailed questions were asked in 1979, allowed more useful data and inferences to be drawn from the survey than was previously possible.

According to the NSMA, their analysis of a list of respondent's code numbers indicated that, at most, only two of their largest members had failed to respond to the survey by September. Later, two more responses from large second mortgage holders were received. Consequently, the data compiled in this survey apply to a substantial portion of the rapidly growing second mortgage markets. At year-end 1978, survey respondents held approximately \$4 billion in second mortgages.

This summary of the survey results is divided into seven sections. Section II briefly describes the survey methodology. Section III discusses the volume of second mortgage loan originations, purchases, sales, and outstandings--both in total, and for survey members of different sizes.

In addition, it draws inferences about the growth of second mortgage lending and the average size of second mortgage loans made, purchased, or sold by different sizes of second mortgage lenders.

Section IV focuses on key operating statistics provided by survey respondents. In particular, it looks at leverage and debt/equity ratios for second mortgage lenders, interest expenses on their borrowings, and gross returns on equity. Data provided by respondents in Section IV were not uniform. In particular, measures of amounts and costs of borrowings undoubtedly differed substantially for commercial banks, mortgage banking companies, and other second mortgage lenders. Yet, there was no way to determine which respondents were banks or mortgage banks. As a result, many data could not be used in the analysis, because they did not appear to apply solely to second mortgage lending.

Section V discusses the characteristics of second mortgage loans made to households and businesses, and the nature of institutions making each type of loan. Unfortunately, only a limited number of respondents were able to provide some of these data.

Section VI analyzes the divergent delinquency and loss statistics reported by the respondent firms. Finally, Section VII summarizes the data presented in the survey and explains how they vary for different sizes of institutions in the second mortgage markets. Size-related differences in delinquencies, risk aversion, costs of funds, loan terms, loan sizes, business mortgage origination, secondary market participation, and leverage ratios are noted.

An Appendix presents the survey form used to obtain data for the survey. Suggestions for future improvement in the questionnaire are noted in the Appendix.

II. Survey Methodology

The NSMA mailed the questionnaire shown in the Appendix to all of its members in the middle of 1979. Each survey was accompanied by a letter with the return address of CRC. Each survey was identified only with an identification number, so the responses could be kept confidential.

The first responses to the survey were received at CRC in July. In August, the NSMA checked a list of respondent numbers against the list of members to whom it had sent questionnaires. They then called two large members who had not yet returned their questionnaires. Subsequently, additional survey responses were received, including two from large institutions. Thus, it is likely that all of the largest members of the NSMA responded to the request for information.

Coverage of the smaller members of the NSMA was not as complete. Many of the smaller firms were not able to provide detailed responses to a number of the questions. Also, several firms were able to respond only to certain parts of the questionnaire--for instance they only purchased or sold second mortgage paper. Finally, at least one NSMA member reported that it did not return the questionnaire as it held no second mortgage loans. Thus, the overall response rate to the questionnaire was slightly under 50 percent.

In total, 45 responses were received to the questionnaire. Of those, 41 were classed into groups according to the amount of their second mortgage outstandings. The four nonclassifiable responses included three institutions that primarily originated and sold second mortgage loans. Two of those three held no second mortgage balances outstanding at all, while the third held only a very nominal amount. The fourth unclassified response was from an institution that specialized in buying second mortgages. Since the servicing of their second mortgages was conducted by other institutions, it was able to provide only a few responses to the questionnaire.

Data were aggregated by the size of the institutions, in conformance with the procedure used in NSMA's 1978 survey. However, the size groupings were not the same. Because of the greater number of responses and the fact that a number of institutions held similar amounts of second mortgages, the survey data were divided into five groups according to the amount of second mortgage loans outstanding. Those categories and (in parentheses) the number of respondents in each were: \$0-5 million (8), \$5-15 million (9), \$20-45 million (9), \$50-125 million (6), and \$199 million and over (9).

For each group, the following data were reported for each item: the average value for that size group, the high value for that group, the low value for that size group, and the median value for that size group. These data allow respondent institutions to compare their characteristics with the high, low, or median characteristics of other institutions with similar size holdings of second mortgages. However, each characteristic was treated independently. Hence, high, low or

median value responses for different items do not necessarily apply to the same institution.

In addition to high, low, and mean values for each characteristic, average values are reported for that characteristic for each size group. For comparison purposes, overall averages (based on data from all respondents) are presented for each characteristic surveyed.

The total number of respondents that provided usable data for each item is summarized on the table providing data for the largest size group. In addition, the number of respondents whose data are included in group averages is reported with each average. Response rates to particular questions frequently are low because some respondents did not answer the questions. Also, some responses were not usable.

A number of adjustments had to be made in the data to make sure that responses given by various institutions were mutually consistent. In two cases the total number of second mortgage loans reported for the last quarter did not equal the sum of the household loans and non-household loans. In these cases the total was adjusted to make it equal to the sum of its parts.

Eight of the respondents reported figures for their average net receivables which were very low relative to their total year-end receivables. They may have reported year-end receivables divided by 12 for their average receivables. Rather than assume that this calculation had been made, we decided not to use their data in calculating the ratio of average borrowings to average net receivables.

Respondents often included unearned finance charges in reporting outstanding delinquent loans. It became apparent that unearned finance

charges were included in outstandings because the amounts reported as current or delinquent exceeded the total amount of receivables outstanding. In these (17) cases, we calculated the ratio of reported total receivables to total (delinquent plus current) loan balances outstanding and used it to deflate each of the delinquent categories. Delinquency percentages should be little affected, because the same ratio was applied to total loan balances as to delinquent loan balances in each delinquency category. In general, it was our intent to calculate delinquent principal balances as a percentage of outstanding principal balances, excluding any unearned finance charges.

Finally, a number of institutions that engaged in several lines of business were unable to identify the revenues, interest costs, and profits that were applicable only to their second mortgage loans. However, many of them did estimate the relative importance of their second mortgage loans in their total loan portfolios, and provided data on their total operations. In those cases we prorated interest costs and total borrowings by the proportions of second mortgage loans in their portfolios before using the data.

Overall, the respondents did a conscientious job of filling out the questionnaires. The major problem was that some of them did not keep data in the manner that was requested by the questionnaire. The adjustments described above should facilitate accurate comparison among institutions. In subsequent years, modifications of the questionnaire should further enhance comparability.

III. Loan Volume

Table 1 presents data on the amounts of second mortgage loans outstanding that were owned or serviced by each institution and the amounts of second mortgage loans that were originated, purchased, or sold by institutions in 1978. It also provides data on average net loans receivable and on the ratio of quarterly loan originations to total balances outstanding.

Table 1 also provides data on numbers of second mortgage loans. Information on the number of loans was divided into total dollar volumes to calculate average sizes of second mortgage loans outstanding, serviced, originated, purchased, or sold by all respondents. The average size of second mortgage loans made by all respondents to the survey was calculated both on a per loan and on a per institution basis within each size category. Because the average size of loan per institution might be very high or low for some small institutions, giving equal weight to the average value of second mortgages held by each institution could suggest that the average size of second mortgage loans was (on average) larger or smaller than it actually was.

Outstanding Loans

The data summarized in Table 1 indicate that reporting NSMA members held an average of nearly \$100 million in second mortgage loans outstanding at year-end 1978. On average, each institution held a portfolio of second mortgages that had an average outstanding balance of \$7,500. However, the largest institutions held considerably smaller mortgages than the others. As a result, the average size of second mortgage loans held was slightly over \$3,000.

Loan Servicing

Four institutions included in the tables serviced second mortgage loans for others. One of those institutions held a relatively small amount of second mortgage loans for its own account but serviced nearly \$20 million worth of second mortgage loans. The other three institutions held substantial amounts of second mortgages for their own account and serviced additional mortgage loan portfolios with an average value of \$16 million. In addition, three institutions only serviced second mortgages. They held zero or negligible amounts of second mortgage loans for their own account. Because they reported very little data, they were not included in the tables. Those institutions each serviced, on average, \$6-1/4 million in second mortgage loans. Thus, respondent institutions, in total, serviced less than \$100 million in second mortgages. This is very small relative to the nearly \$4 billion in second mortgages that all NSMA respondents held in their loan portfolios.

The average size of a loan serviced, at \$8800 per institution, was larger than the average size loan (\$7700) held by institutions' in their own portfolios.

Loans Originated

The total amount of loans originated during the past year averaged \$66 million per institution, a very substantial figure relative to the \$92 million in loans outstanding at the end of the fiscal year. This suggests that NSMA members are rapidly expanding their holdings of second mortgage loans. Further, the average size of new second mortgage loans is larger than the average size of existing second mortgage loans. Newly originated second mortgage loans averaged \$10,000 at the typical respondent institution. However, the largest respondents originated considerably smaller (\$3,000) loans.

Loan Purchases

Second mortgage loans were not purchased by a large number of institutions. Most institutions that purchased second mortgage loans held \$5 to \$45 million in second mortgage outstandings. They had purchased, on average, slightly under \$5 million of second mortgage loans during the year. Three of the largest institutions also purchased second mortgage loans, but their net purchases were even smaller, on balance, than those of the smaller NSMA members.

Loan Sales

Only seven of the respondent institutions (whose data are summarized in the table, plus the three whose data are not) reported selling second mortgage loans. Institutions of nearly all size categories sold second mortgage loans. However, it appears that second mortgage loan sales activity is not yet extensive. Only ten out of 45 institutions reported selling second mortgage loans and only 13 reported buying second mortgage loans. This indicates that there are active secondary markets for second mortgage loans but most of these institutions do not participate in them.

Loan Volume

Growth in second mortgage loans outstanding has been very rapid. The last quarters' volume equalled 30 percent of the amount outstanding at the reporting institutions. This rapid growth is primarily due to the fact that the institutions that hold the largest amount of second mortgage loans have grown very rapidly. The ratio of the last quarter's loan volume to loan outstandings averaged 34 percent for institutions with the largest (\$199 million plus) second mortgage loan holdings. In contrast, most of the other institutions had quarterly volume to out-

outstandings ratios closer to 20 percent--which is still substantial but far below the ratios applicable to the largest institutions.

Some of this volume may be due to refinancings of existing loans--particularly refinancings that occurred in the last quarter of the year. Thus, until data become available on refinancings, it will not be possible to determine what portion of this volume represents true growth and what portion merely represents refinancing of existing balances.

IV. Key Operating Statistics

From statistics reported by approximately half of the NSMA respondents on second mortgage outstandings, average amount borrowed, interest expenses, interest income and average equity, it is possible to draw a number of interesting conclusions. (Table 2).

The major conclusion that can be drawn from Table 2 is that second mortgage lending is a highly leveraged business. The average borrowings of second mortgage lenders, relative to their second mortgage loans outstanding at year end, were close to 90 percent. This was true for every size category of lender analyzed. Relatedly, the average borrowings of survey respondents were almost four times average equity. While the average ratio of borrowings to receivables ranged only from 86.9 to 91.9 percent for various size categories of institutions, the ratio of borrowings to equity varied widely. The smallest size category of second mortgage holders had almost as much equity as debt, while the intermediate size categories held five times as much debt as equity.

The average borrowing ratio may have been lower for the smallest second mortgage market participants because they paid the highest ratio of interest to average borrowings (9.72%). In contrast, the holders of

the largest amounts of second mortgages paid interest that was, on average, less than or equal to eight percent of their total average borrowings.

Overall, the average interest expense ratio was approximately eight percent, but this may have been understated. Some of the very largest respondents appeared to be commercial banks who stated their interest expense but did not include the costs of servicing deposits as a cost of obtaining funds. Because they paid relatively low rates on deposits, their inclusion in calculations of average interest expenses lowered the ratio of average interest expense to total borrowings.

The ratio of gross interest income to average equity generally was higher for institutions that were more highly leveraged. Of course, the more highly leveraged institutions had to pay more interest on their borrowings, in addition to mortgage service costs, before they received a net return on their average equity. As a result, ratios of net earnings to average receivables did not vary widely among size categories--except for one category where one institution reported losses equal to one-quarter of its second mortgage receivables. Overall, net earnings equalled 3.6 percent of average receivables outstanding. However, only 18 institutions reported sufficient data for this statistic to be calculated. While the ratio of net earnings to average receivables did not vary widely (except as noted above) the ratio of pretax income to gross income varied widely for different institutions--even though the institution with large losses was excluded from the calculation.

V. Loan Composition and Terms

Respondents to the survey were asked to segregate their second mortgage lending activities by household versus other purposes during the last quarter of their fiscal year. The household share of second mortgage lending predominated (Table 3). Of 28 institutions that were able to report this information in a usable form, only eight made loans for other than household purposes. Those eight still made over 90 percent of their loans and 75 percent of their dollar volume of second mortgage loans to households. Thus, overall, loans made for household purposes, as reported by the 28 respondents, accounted for 99 percent of the number (and 97 percent of the dollar volume) of their second mortgage lending.

Non-household loans, on average, were substantially larger than loans made to households. They averaged over \$15,000 each in contrast to an average size household loan of about \$4,200.

Respondents were also asked to describe the typical terms on their new second mortgage loans: the average maturity and the maximum ratio of loan to appraised equity. For all respondents combined, the average maturity of second mortgage loans offered was slightly in excess of six years. The average maturity was longest for the \$50 to \$125 million category of respondents. It averaged over eight years. It was the shortest for the \$20 to \$45 million category, with an average maturity of four and one-half years.

Institutions' maximum ratio of loans to appraised equity averaged slightly under eighty percent. It was over 80 percent only for the largest two categories of respondents and was only about 70 percent for the smallest category of respondents.

Based on the leniency of loan maturities and loan-to-equity ratios that were granted by institutions in the \$50 to \$125 million size category, one would expect that they were willing to take slightly more risk than other institutions. In the next section we analyze comparative delinquency and charge-off statistics for different size classes of institutions.

VI. Delinquency and Loss Statistics

Information obtained in the survey revealed a wide variety in the way firms calculate their delinquency statistics. Some institutions make no provision for "curing" delinquencies. If an individual misses a payment, that loan is subsequently considered delinquent until it is fully repaid. In contrast, other institutions consider a loan current so long as the borrower is making current payments regularly--even if total payments since its origination are one or two payments in arrears. In addition, some institutions report their delinquencies as principal balances delinquent, while other institutions report their delinquencies as the sum of principal balances plus unearned finance charges outstanding on delinquent loans. As previously noted, wherever we observed that the latter type of reporting had been used, we converted the delinquency statistics to a principal balance basis. Finally, it should be noted that delinquent loans tended to be smaller than other loans. Consequently, delinquent percentages based on the number of loans delinquent were much higher than delinquency statistics reported as a percentage of outstanding principal balances delinquent.

Uniform data were most readily available for delinquent balances at least 60 days past due. The data, reported in Table 4, indicate that less than two percent of all outstanding second mortgage loan balances were delinquent more than 60 days, and only 1-1/4 percent of outstanding second mortgage loan balances were delinquent more than 90 days.

Delinquency statistics varied substantially with the size of institution. The largest institutions had relatively high delinquencies. Their 60 day delinquencies exceeded four and one-half percent and their 90 day delinquencies equalled 3-1/4 percent. At the other extreme, the \$50 to \$125 million classification of respondents had the lowest delinquency statistics. This is surprising since members of that group reported that they made loans with the longest maturities and highest loan to appraised equity ratios. Less than one-half of one percent of their loans were delinquent for more than 60 days, and only about one quarter of one percent of their loans were delinquent over 90 days.

Charge-off experience tended to parallel delinquency experience. For all respondents, the ratio of charge-offs to average outstanding balances was .76 percent. This percentage was highest for the smallest and largest size categories of respondents, at eight- or nine-tenths of one percent. Charge-offs were smallest for holders of \$5 to \$15 million in outstanding receivables, at 0.12 percent.

Overall, recoveries on charged-off loans averaged 0.3 percent. Recoveries tended to be highest for those categories of second mortgage lenders that had the highest charge-off rates. The largest size category of respondents had a recovery rate of 0.37 percent, which left

it with a net loss rate of slightly below 1/2 of one percent. The smallest size category of respondents had a recovery rate of 0.4 percent, which left it with a net charge-off rate of 0.4 percent. The \$5 to \$15 million size category of respondents had practically no recoveries, but also had miniscule charge-offs. Thus, their net loss rate was only slightly more than 0.1 percent.

Reserves for losses varied widely among institutions. The size categories with the lowest loss experiences tended to keep the smallest reserves for losses. Thus, the \$50 to \$125 million category kept loss reserves equal to 0.8 percent of outstandings. The largest category of respondents, which had the highest loss rate, maintained the largest reserve for losses--at 3.24 percent. This raised the full sample's average reserve for losses substantially (to 2.58 percent) due to the great influence of the large size category on the aggregate statistics.

The only exception to the rule that loss reserves paralleled recent loss experiences existed in the \$0 to \$5 million size category.

Overall, net loss experiences on second mortgage loans were relatively low--with net losses ranging from 0.1 to 0.5 percent of average receivables outstanding in the preceding year. Rapid growth in the amount of receivables outstanding, coupled with the fact that payment problems may not show up immediately after a loan is made, suggest that the loss ratio may rise somewhat in the future. Losses could also rise if home prices and equity values do not continue to rise as rapidly as they have in the past. Nonetheless, NSMA survey respondents had very

favorable loss experience on their second mortgage loans. Their loss rate was no higher than the average loss rate experienced by commercial banks on their consumer instalment lending. It also was substantially below loss rates reported by finance companies on their consumer instalment lending.

VI. Variations Among Size Groups---Summary

Throughout this discussion it has been noted that there is substantial variation in the operations of different size classes of institutions. The largest size class showed the largest growth rate in second mortgage holdings. That group also tended to originate and hold relatively small average size second mortgage loans. They also made loans of relatively short maturity. Possibly because they had aggressively expanded into the second mortgage markets in recent years, as a group their loss experience was one of the highest. Their delinquency rates were also relatively high, which indicated their possible losses might be substantial in the future. However, they had prepared for possible losses by setting aside substantial loss reserves. This group did not participate actively in the secondary mortgage markets. Finally, it had the lowest cost of funds of any group.

The \$50 to \$125 million size category of second mortgage holders extended loans on the most lenient terms, both as far as downpayments and maturities were concerned. However, they did not experience substantial losses in spite of their leniency. In fact, their net losses were among the lowest of all categories of institutions surveyed.

The leverage ratio for institutions holding \$50 to \$125 million in mortgages was among the highest of all the institutions surveyed, but their interest expense was not excessively high. Their gross earnings indicated that they could well afford to pay the interest due on their borrowings and still retain a substantial net profit on their second mortgage loan operations.

This size group also appeared to include the most aggressive lenders in the non-household area--albeit for them, as for all institutions--their non-household loan second mortgage lending accounted for a relatively small fraction of their second mortgage loan portfolio.

The \$20 to \$45 million size category of respondents made loans with about the same maturities, delinquencies, and losses as other respondents. However, their loans were of shorter than average maturities. Also, they participated more extensively than other size classes of institutions in buying and selling second mortgage loans in the secondary mortgage market. Two-thirds of the institutions in the \$20 to \$45 million category had purchased loans in the secondary mortgage markets in the last year.

Institutions in the \$20 to \$45 million category were highly leveraged. They paid relatively high rates on their borrowed funds, yet they still reported the highest net rate of return on their second mortgage loan operations. The ratio of their gross interest income to average receivables (at 15.4 percent) was among the highest of any size category. This fact undoubtedly had favorable effect on their net earnings ratio.

The \$5 to \$15 million size category of institutions was substantially below average both in the rate at which it charged-off consumer loans and in total delinquency rates. This was so in spite of the fact that the average respondent in this group granted relatively long average maturities on new consumer loans.

The \$5 to \$15 million in receivables group paid slightly higher than average interest relative to their receivables, and were substantially less leveraged than average (as measured by the ratio of their borrowings to their average equity). Because of high losses at one institution, their average net profits were the lowest of any group.

Members in the smallest size category of respondents were among the least leveraged of all the respondents. They also had the highest interest expense ratio on their borrowings. Their high interest expense could explain why they were more reluctant to take on debt to finance second mortgage acquisitions than other institutions in the survey.

The smallest holders had average net rates of return on second mortgages, even though the ratio of their gross interest income to their receivables was the highest of any group. Their delinquencies were somewhat above average, and their loss rate was about average. These institutions participated very little in the secondary mortgage markets, although two out of the eight institutions in this size category were net sellers of second mortgages. Not surprisingly, this size category also had the lowest rate of growth of all the size categories analyzed.

Overall, the statistics provided by the NSMA survey respondents indicate that considerable diversity exists in the type of operations engaged in by NSMA members. Significant variations exist among members with respect to their participation in secondary mortgage markets, credit terms, delinquency and loss experience, leverage ratios, and cost of borrowing. However, the uniformly high ratio of originations to year-end receivables suggests that all size categories of second mortgage holders experienced rapid growth in the survey year.

Table 1. Second Mortgage Loan Flows and Outstandings

Category: Respondents with \$199 Million or Over in Outstandings Total - 9 Responses*						Full Sample
		High	Low	Median**	Average	Overall Average +
<u>Year-end Net Outstandings</u>	(8)	\$579,789,900	199,130,000	359,836,500	361,747,113	92,301,530 (40)
<u>Owned</u>	(9)	# 361,511	27,058	58,293	116,396	30,320 (40)
<u>Avg./Institution</u>	(8)	\$ 9,677	894	8,000	6,121	7,496 (39)
<u>Overall Avg./Loan</u>	(8)	\$			2,872	3,135 (39)
<u>Serviced Only</u>		\$				16,180,550 (4)
	(0)	#				2,104 (4)
<u>Avg./Institution</u>		\$				8,838 (4)
<u>Overall Avg./Loan</u>		\$				7,689 (4)
<u>Amt. Originated</u>	(7)	\$440,532,000	180,231,000	296,530,000	292,431,286	66,616,912 (39)
	(8)	# 344,645	16,342	34,676	90,104	21,245 (39)
<u>Avg./Institution</u>	(7)	\$ 11,165	1,278	8,841	6,680	9,697 (38)
<u>Overall Avg./Loan</u>	(7)	\$			2,937	3,225 (38)
<u>Amt. Purchased</u>	(3)	\$ 7,284,000	32,000	760,000	2,692,000	4,105,767 (12)
	(3)	# 4,878	79	955	1,971	1,372 (11)
<u>Avg./Institution</u>	(3)	\$ 1,493	405	796	898	6,723 (11)
<u>Overall Avg./Loan</u>	(3)	\$			1,366	2,690 (11)
<u>Amt. Sold</u>	(2)	\$ 12,230,000	1,546,000		6,888,000	11,621,491 (7)
	(1)	# 11,067				3,031 (6)
<u>Avg./Institution</u>	(1)	\$ 1,105				9,569 (6)
<u>Overall Avg./Loan</u>		\$				4,403 (6)
<u>Average Net Loans Receivable</u>	(6)	\$609,239,200	167,370,000	320,467,500	333,711,533	87,946,593 (29)
<u>Quarterly Originations Outstandings</u>	(6)	% 72.0	17.0	29.0	34.3	30.97 (31)

* The number of useful responses to each survey item is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

+ The number included in the average is shown in parentheses.

Table 1. Continued

Category: \$50-\$125 Million in Second Mortgages Outstanding						Full Sample
Total - 6 Responses*						Overall Average
		High	Low	Median**	Average	
<u>Year-end Net Outstandings</u>	(6)	\$107,675,000	52,890,000	61,299,000	67,968,333	92,301,530
<u>Owned</u>	(6)	# 39,457	4,283	8,239	13,212	30,320
<u>Avg./Institution</u>	(6)	\$ 14,935	2,729	6,482	7,456	7,496
<u>Overall Avg./Loan</u>	(6)	\$			5,144	3,135
<u>Serviced Only</u>	(1)	\$ 26,769,000				16,180,550
	(1)	# 2,279				2,104
<u>Avg./Institution</u>	(1)	\$ 11,746				8,838
<u>Overall Avg./Loan</u>		\$				7,689
<u>Amt. Originated</u>	(6)	\$ 66,461,000	28,910,000	46,853,500	47,223,500	66,616,912
	(6)	# 26,726	2,789	4,650	8,682	21,245
<u>Avg./Institution</u>	(6)	\$ 16,266	2,240	8,234	8,780	9,697
<u>Overall Avg./Loan</u>	(6)	\$			5,439	3,225
<u>Amt. Purchased</u>	(0)	\$				4,105,767
		#				1,372
<u>Avg./Institution</u>		\$				6,723
<u>Overall Avg./Loan</u>		\$				2,690
<u>Amt. Sold</u>	(1)	\$ 28,800,000				11,621,491
	(1)	# 2,382				3,031
<u>Avg./Institution</u>	(1)	\$ 12,091				9,569
<u>Overall Avg./Loan</u>		\$				4,403
<u>Average Net Loans Receivable</u>	(4)	\$101,118,000	47,569,000	48,944,500	65,562,250	87,946,593
<u>Quarterly Originations Outstandings</u>	(6)	% 40.0	14.0	18.5	20.23	30.97

* The number of useful responses to each survey item is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

Table 1. Continued

Category: \$20-\$45 Million in Second Mortgages Outstanding						Full Sample
Total - 9 Responses*						Overall Average
		High	Low	Median**	Average	
<u>Year-end Net Outstandings</u>	(9)	\$ 43,987,000	23,939,000	34,800,000	32,473,556	92,301,530
<u>Owned</u>	(9)	# 31,999	1,765	3,538	7,900	30,320
<u>Avg./Institution</u>	(9)	\$ 24,922	1,187	7,787	8,595	7,496
<u>Overall Avg./Loan</u>	(9)	\$			4,110	3,135
<u>Serviced Only</u>	(2)	\$ 11,121,200	8,019,000		9,570,100	16,180,550
	(2)	# 2,846	850		1,848	2,104
<u>Avg./Institution</u>	(2)	\$ 13,684	2,818		7,951	8,838
<u>Overall Avg./Loan</u>	(2)	\$			5,179	7,689
<u>Amt. Originated</u>	(9)	\$ 40,246,000	2,369,000	19,977,000	21,059,000	66,616,912
	(9)	# 30,850	132	1,900	4,957	21,245
<u>Avg./Institution</u>	(9)	\$ 27,589	1,305	10,578	11,860	9,697
<u>Overall Avg./Loan</u>	(9)	\$			4,248	3,225
<u>Amt. Purchased</u>	(6)	\$ 23,995,000	127,200	1,454,500	4,958,700	4,105,767
	(6)	# 4,998	5	1,054	1,493	1,372
<u>Avg./Institution</u>	(5)	\$ 25,440	875	3,824	8,118	6,732
<u>Overall Avg./Loan</u>	(6)	\$			3,321	2,690
<u>Amt. Sold</u>	(2)	\$ 11,121,200	7,284,000		9,202,600	11,621,491
	(2)	# 2,189	850		1,520	3,031
<u>Avg./Institution</u>	(2)	\$ 13,084	3,328		8,206	9,569
<u>Overall Avg./Loan</u>	(2)	\$			6,056	4,403
<u>Average Net Loans Receivable</u>	(8)	\$ 38,078,000	14,439,000	26,989,500	26,875,500	87,946,593
<u>Quarterly Originations Outstandings</u>	(8)	% 66.0	2.7	21.5	23.67	30.97

* The number of useful responses to each survey item is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

Table 1. Continued

Category: \$5-\$15 Million in Second Mortgage Outstandings						Full Sample
Total - 9 Responses*						
		High	Low	Median**	Average	Overall Average
<u>Year-end Net Outstandings</u>	(9)	\$ 13,773,000	5,869,000	7,054,000	8,603,989	92,301,530
<u>Owned</u>	(8)	# 2,177	444	1,084	1,092	30,320
<u>Avg./Institution</u>	(8)	\$ 14,000	4,734	7,919	8,805	7,496
<u>Overall Avg./Loan</u>	(8)	\$			7,286	3,135
<u>Serviced Only</u>		\$				16,180,550
	(0)	#				2,104
<u>Avg./Institution</u>		\$				8,838
<u>Overall Avg./Loan</u>		\$				7,689
<u>Amt. Originated</u>	(9)	\$ 8,523,000	2,405,000	5,685,000	5,414,663	66,616,912
	(8)	# 1,359	182	615	635	21,245
<u>Avg./Institution</u>	(8)	\$ 16,867	6,272	9,505	10,551	9,697
<u>Overall Avg./Loan</u>	(8)	\$			9,060	3,225
<u>Amt. Purchased</u>	(3)	\$ 11,007,000	364,000	2,405,000	4,615,333	4,105,767
	(2)	# 182	39		111	1,372
<u>Avg./Institution</u>	(2)	\$ 13,214	9,333		11,274	6,723
<u>Overall Avg./Loan</u>	(2)	\$			12,529	2,690
<u>Amt. Sold</u>		\$				11,621,491
	(0)	#				3,031
<u>Avg./Institution</u>		\$				9,569
<u>Overall Avg./Loan</u>		\$				4,403
<u>Average Net Loan Receivable</u>	(5)	\$ 9,632,000	3,580,000	6,798,000	6,971,400	87,946,593
<u>Quarter Originations Outstandings</u>	(8)	% 32.0	13.0	19.5	20.69	30.97

* The number of useful responses to each survey item is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

Table 1. Continued

Category: \$0-\$5 Million in Second Mortgage Outstandings						Full Sample
Total - 8 Responses*						Overall Average
		High	Low	Median**	Average	
Year-end Net Outstandings	(8)	\$ 4,908,000	682,000	1,920,204	2,572,051	92,301,530
Owned	(8)	# 3,280	61	239	825	30,320
Avg./Institution	(8)	\$ 11,689	1,118	7,807	7,285	7,496
Overall Avg./Loan	(8)	\$			3,119	3,135
Serviced Only	(1)	\$ 18,813,000				16,180,550
	(1)	# 2,442				2,104
Avg./Institution	(1)	\$ 7,704				8,838
Overall Avg./Loan		\$				7,689
Amt. Originated	(8)	\$ 5,282,789	295,000	3,025,000	3,679,599	66,616,912
	(8)	# 3,195	16	369	739	21,245
Avg./Institution	(8)	\$ 18,438	1,278	10,280	9,773	9,697
Overall Avg./Loan	(8)	\$			4,977	3,225
Amt. Purchased		\$				4,105,767
	(0)	#				1,372
Avg./Institution		\$				6,723
Overall Avg./Loan		\$				2,690
Amt. Sold	(2)	\$ 11,236,000	9,133,241		10,184,621	11,621,491
	(2)	# 1,127	512		820	3,031
Avg./Institution	(2)	\$ 17,838	9,970		13,904	9,569
Overall Avg./Loan	(2)	\$			12,428	4,403
Average Net Loans Receivable	(6)	\$ 23,092,000	941,000	2,852,797	6,015,266	87,946,593
Quarterly Originations Outstandings	(3)	\$ 20.0	13.0	13.7	14.50	30.97

* The number of useful responses to each survey item is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

Table II. Operating Statistics

Size: Year End Outstandings \$199 Million or Over						Full Sample
Total - 9 Responses*						
		High	Low	Median**	Average	Overall Average
Avg. Borrowings	(4)	\$385,896,000	187,327,000	252,775,500	269,693,500	64,063,023 (24)
as % of Avg. Receivables	(4)	% 105.0	76.0	85.0	88.02	88.66 (18)
as % of Avg. Equity	(4)	5.75	2.84	4.66	3.69	3.88 (21)
Int. Expense	(4)	\$ 32,354,000	12,255,000	19,926,500	21,115,500	4,755,986 (26)
as % of Avg. Borrowings	(6)	% 8.4	5.2	7.0	7.83	7.96 (26)
Int. Income	(3)	\$ 92,952,000	3,917,000	33,903,000	43,590,667	7,479,805 (26)
as % of Avg. Equity	(3)	% 112.0	10.2	58.8	63.8	61.11 (22)
as % of Avg. Receivables	(3)	% 25.2	1.8	11.9	15.0	14.8 (16)
Pretax Income						
as % of Avg. Receivables	(3)	% 6.1	1.0	1.7	3.4	3.6 (18)
as % of Interest Income	(5)	% 55.1	12.2	17.4	17.0	17.8 (20)

* The number of useful responses to each survey item is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

* The number included in the average is shown in parentheses.

Table II. Continued

Category: \$50-\$125 Million in Second Mortgage Outstandings						Full Sample
Total - 6 Responses*						
		High	Low	Median**	Average	Overall Average
Avg. Borrowings	(5)	\$ 77,930,000	38,500,000	53,317,000	56,527,400	64,063,023
as % of Avg. Receivables	(4)	% 142.0	77.0	82.5	91.1	88.66
as % of Avg. Equity	(5)	20.95	2.78	6.10	5.11	3.88
Int. Expense	(5)	\$ 7,352,000	3,567,000	3,911,000	4,553,000	4,755,986
as % of Avg. Borrowings	(5)	% 10.2	4.0	7.9	8.05	7.96
Int. Income	(5)	\$ 11,652,000	451,000	7,773,000	7,298,400	7,479,805
as % of Avg. Equity	(5)	% 391.0	7.1	74.0	65.95	61.11
as % of Avg. Receivables	(5)	% 18.1	11.5	11.9	13.2	14.8
Pretax Income						
as % of Avg. Receivables	(3)	% 5.3	2.9	4.5	4.2	3.6
as % of Interest Income	(3)	% 39.1	24.1	29.2	31.9	17.8

*The number of useful responses to each survey item is shown in parentheses by the item.

**For an even number of responses, the median is the average of the middle two.

Table II. Continued

Category: \$20-\$45 Million in Second Mortgage Outstandings					Full Sample	
Total - 9 Responses*						
		High	Low	Median**	Average	Overall Average
Avg. Borrowings	(6)	\$ 33,052,000	1,303,700	27,003,000	23,598,783	64,063,023
as % of Avg. Receivables	(5)	% 100.0	70.7	91.2	88.28	88.66
as % of Avg. Equity	(3)	% 11.36	2.91	6.58	5.14	3.88
Int. Expense	(6)	\$ 2,498,731	183,405	2,449,500	1,630,689	4,795,986
as % of Avg. Borrowings	(6)	% 14.0	7.56	8.65	8.65	7.96
Int. Income	(6)	\$ 5,520,000	305,000	4,718,476	3,464,806	7,479,805
as % of Avg. Equity	(3)	% 110.0	7.7	15.2	40.98	61.11
as % of Avg. Receivables	(3)	% 16.7	14.5	15.3	15.4	14.8
Pretax Income						
as % of Avg. Receivables	(5)	% 5.6	2.2	5.0	4.4	3.6
as % of Interest Income	(4)	% 34.5	11.6	17.9	21.0	17.8

* The number of useful responses to each survey item is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

Table II. Continued

Category: \$5-\$15 Million in Second Mortgage Outstandings					Full Sample	
Total - 9 Responses*						
		High	Low	Median**	Average	Overall Average
Avg. Borrowings	(5)	\$ 9,557,200	2,087,000	5,244,000	5,861,925	64,063,023
as % of Avg. Receivables	(3)	% 106.0	76.0	77.0	89.06	88.66
as % of Avg. Equity	(5)	3.51	1.00	3.10	2.71	3.88
Int. Expense	(6)	\$ 380,000	118,000	542,000	501,580	4,755,986
as % of Avg. Borrowings	(5)	% 9.7	2.6	9.2	8.24	7.96
Int. Income	(5)	\$ 1,630,195	51,000	430,000	672,439	7,479,805
as % of Avg. Equity	(5)	% 74.8	3.5	20.7	36.27	61.11
as % of Avg. Receivables	(3)	% 18.2	.8	17.1	13.2	14.8
Pretax Income						
as % of Avg. Receivables	(4)	15.7	-24.2	6.1	.2	3.6
as of Interest Income	(3)	% 48.9	4.4	21.1	28.9	17.8

* The number of useful responses to each survey item is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

Table II. Continued

Category: \$0-\$5 Million in Second Mortgage Outstandings					Full Sample	
Total - 8 Responses*						
		High	Low	Median**	Average	Overall Average
Avg. Borrowings	(4)	\$ 3,056,000	300,000	2,447,834	2,062,917	64,063,023
as % of Avg. Receivables	(2)	% 92.0	81.8		86.90	88.66
as % of Avg. Equity	(4)	% 6.37	.439	1.23	1.03	3.88
Int. Expense	(5)	\$ 365,000	38,269	249,768	233,407	4,755,986
as % of Avg. Borrowings	(4)	% 12.8	8.1	10.2	9.72	7.96
Int. Income	(7)	\$ 899,000	83,000	230,000	437,128	7,479,805
as % of Avg. Equity	(6)	% 269.0	1.20	107.5	31.21	61.11
as % of Avg. Receivables	(4)	% 38.9	13.1	21.2	22.9	14.8
Pretax Income						
as % of Avg. Receivables	(3)	% 7.1	2.1	2.2	3.6	3.6
as % of Interest Income	(5)	% 29.2	8.0	17.9	14.4	17.8

* The number of useful responses to each survey item is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

Table III. New Loan Composition and Terms in the Last Quarter

Category: \$199 Million or Over in Year-end Outstandings						Full Sample
Total - 9 Responses*						
		High	Low	Median**	Average	Overall Average +
Household, #	(4) #	98,582	6,913	22,407	36,327	6,152 (28)
% of total loans	(4) %	100.00	100.00	100.00	100.00	99.01 (29)
\$ volume	(4) \$	303,889,000	36,807,000	124,062,500	147,205,250	26,550,750 (28)
% of total volume	(4) %	100.00	100.00	100.00	100.00	97.0 (27)
Avg./Institution	(4) \$	11,933	1,301	7,102	6,859	9,499 (27)
Overall Avg.	(4) \$				4,052	4,239 (27)
Other Purposes, #	#					215 (8)++
% of total loans	%					0.99 (8)++
\$ volume	(0) \$					3,496,000 (7)
% of \$ volume	%					3.0 (7)
Avg./Institution	\$					35,709 (7)
Overall Avg.	\$					15,384 (7)
Total, #	(6) #	107,642	6,913	22,407	43,575	9,358 (31)
\$ volume	(7) \$	303,889,000	36,807,000	121,789,000	133,639,143	34,669,969 (32)
Avg./Institution	(6) \$	11,933	1,197	7,101	6,708	11,375 (30)
Overall Avg.	(6) \$				3,122	3,255 (30)
Loan Terms on Consumer Loans						
Avg. Maturity	(7) mos.	114	36	52	70.1	74.9 (32)
Avg. Ratio Loan/Appraised Equity	(5) %	85.00	78.00	80.00	81.60	77.3 (27)

*The number of useful responses to each survey item is shown in parentheses by the item.

**For an even number of responses, the median is the average of the middle two.

+The number included in the average is shown in parentheses.

++For the 8 respondents who originated loans for other than consumer purposes, the # of loans averaged 9.4% of their total portfolio. The \$ volume reported by 7 of these respondents averaged 25% of their portfolios.

Table III. Continued

Category: \$50-\$125 Million in Second Mortgage Outstandings						Full Sample
Total - 6 Responses*						Overall Average
		High	Low	Median**	Average	
Household, #	(6)	# 6,252	628	1,028	2,009	6,152
% of total loans	(6)	% 100.00	72.00	89.8	88.83	99.01
\$ volume	(6)	\$ 18,408,000	7,691,000	10,036,000	10,865,167	26,055,750
% of total volume	(6)	% 100.00	40.7	81.4	74.16	97.0
Avg./Institution	(6)	\$ 16,479	1,230	10,198	9,845	9,499
Overall Avg.	(6)	\$			5,409	4,239
Other Purposes, #	(5)	# 817	97	239	303	215
% of total loans	(5)	% 28	7.3	11.6	11.89	0.99
\$ volume	(5)	\$ 11,201,000	789,000	4,024,000	4,543,600	3,496,000
% of total volume	(5)	% 59.3	7.4	21.8	29.25	3.0
Avg./Institution	(5)	\$ 21,423	8,134	13,710	14,636	35,709
Overall Avg.	(5)	\$			14,995	15,384
Total, #	(6)	# 7,069	759	1,100	2,261	9,358
\$ volume	(6)	\$ 23,528,000	10,232,000	12,501,000	14,651,500	34,669,969
Avg./Institution	(6)	\$ 16,483	2,673	10,536	10,290	11,375
Overall Avg.	(6)	\$			6,480	3,255
Loan Terms on Consumer Loans						
Avg. Maturity	(4) mos.	127	56	103	97.25	74.9
Avg. Ratio Loan/Appraised Equity	(4) %	100.00	80.00	82.5	86.5	77.3

* The number of useful responses to each survey item is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

Table III. Continued

Category: \$20-\$45 Million in Second Mortgages Outstandings Total - 9 Responses*						Full Sample
		High	Low	Median**	Average	Overall Average
Household, #	(8) #	7,747	18	484	1,641	6.152
% of total loans	(8) %	100	75.6	100	98.50	99.01
\$ volume	(7) \$	20,161,000	247,000	6,240,000	8,095,407	26,055,750
% of total volume	(7) %	100	23.8	100	95.71	97.0
Avg./Institution	(7) \$	17,517	1,420	11,408	10,308	9,499
Overall Avg.	(7) \$				4,393	4,239
Other Purposes, #	(3) #	122	5	73	67	215
% of total loans	(3) %	24.4	4	21.7	5.93	0.99
\$ volume	(2) \$	1,730,000	813,000		1,271,500	3,496,000
% of total volume	(2) %	76.7	7.9		11.08	3.0
Avg./Institution	(2) \$	162,600	14,180		88,390	35,709
Overall Avg.	(2) \$				20,024	15,384
Total, #	(8) #	7,747	23	484	1,666	9,358
\$ volume	(8) \$	21,891,000	1,060,000	6,807,425	8,396,856	34,669,969
Avg./Institution	(8) \$	46,087	1,420	12,729	16,431	11,375
Overall Avg.	(8) \$				5,041	3,255
Loan Terms on Consumer Loans						
Avg. Maturity	(8) mos.	82.2	33	48	53.15	74.9
Avg. Ratio Loan/Appraised Equity	(6) %	80	63.3	77.5	75.7	77.3

* The number of useful responses to each survey item is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

Table III. Continued

Category: \$5-\$15 Million in Second Mortgages Outstandings						Full Sample
Total - 9 Responses*						
		High	Low	Median**	Average	Overall Average
Household, #	(7) #	354	71	138	170	6,152
% of total loans	(8) %	100.00	100.00	100.00	100.00	99.01
\$ volume	(8) \$	2,696,000	910,000	1,891,500	1,821,770	26,055,750
% of total volume	(8) %	100.00	100.00	100.00	100.00	97.0
Avg./Institution	(7) \$	16,139	5,912	10,291	11,380	9,499
Overall Avg.	(7) \$				9,982	4,239
Other Purposes, #	#					215
% of total loans	%					0.99
\$ volume	(0) \$					3,496,000
% of total volume	%					3.0
Avg./Institution	\$					35,709
Overall Avg.	\$					15,384
Total, #	(7) #	354	71	138	170	9,358
\$ volume	(8) \$	2,696,000	910,000	1,891,500	1,821,770	34,669,969
Avg./Institution	(7) \$	16,139	5,912	10,291	11,380	11,375
Overall Avg.	(7) \$				9,982	3,255

Loan Terms on Consumer Loans

Avg. Maturity	(7) mos.	150	61.1	84	93.5	74.9
Avg. Ratio Loan/Appraised Equity	(6) %	85	60	77.5	75.5	77.3

* The number of useful responses to each survey item is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

Table III. Continued

Category: \$0-\$5 Million in Second Mortgages Outstanding Total - 8 Responses*						Full Sample
		High	Low	Median**	Average	Overall Average
Household, #	(4)	# 280	24	140	146	6,152
% of total loans	(5)	% 100.00	100.00	100.00	100.00	99.01
\$ volume	(3)	\$ 3,059,000	248,000	1,000,000	1,435,667	26,055,750
% of total volume	(5)	% 100.00	100.00	100.00	100.00	97.0
Avg./Institution	(3)	\$ 10,925	6,897	10,333	9,385	9,499
Overall Avg.	(3)	\$			9,592	4,239
Other Purposes, #		#				215
% of total loans		%				0.99
\$ volume		\$				3,496,000
% of total volume		%				3.0
Avg./Institution		\$				35,709
Overall Avg.		\$				15,389
Total, #	(4)	# 280	24	140	146	9,358
\$ volume	(3)	\$ 3,059,000	248,000	1,000,000	1,435,667	34,669,969
Avg./Institution	(3)	\$ 10,925	6,897	10,333	9,385	11,375
Overall Avg.	(3)	\$			9,592	3,255
Loan Terms on Consumer Loans						
Avg. Maturity	(6) mos.	92	57	72	78.8	74.9
Avg. Ratio Loan/Appraised Equity	(6) %	87	50	75	71	77.3

* The number of useful responses to each survey item is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

Table IV. Delinquencies and Charge-offs

Category: \$0-\$5 Million in Second Mortgages Outstandings										Full Sample	
Total - 8 Responses*										Overall Average	
		High		Low		Median**		Average		No.++	\$
		No.	\$	No.	\$	No.	\$	No.++	\$		
Current and											
< 60 days	(5)	99.76	99.72	85.09	89.20	94.78	95.63	93.04	95.47	92.96(32)	98.08(34)
60-89 days	(5)	3.87	3.06	0	0	2.0	.94	1.63	1.29	1.97(31)	.60(33)
90 + days	(5)	11.98	7.74	.24	.28	3.10	2.44	5.33	3.25	5.06(31)	1.27(33)
60 + days	(5)	14.91	10.80	.24	.28	5.22	4.37	6.96	4.53	7.04(32)	1.91(34)
Total Unpaid											
Net Balances											
over 60 days	(5)	33,771,632		1,604,064		15,169,198		15,165,763		2,527,734	(34)
Charge Offs as											
% of Average											
Receivables	(5)	3.44%		.23%		1.24%		.855%		.76%	(26)
Recoveries as											
% of Avg.											
Receivables	(3)	.62%		.285%		.29%		.37%		.3%	(24)
Reserve for											
Losses--% of											
Year End											
Receivables	(4)	3.99%		2.27%		3.47%		3.24%		2.58%	(34)

* The number of useful responses to each survey item is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

++ The average # of the delinquent loans is a weighted average/outstanding loans. In contrast, the \$ amount of delinquencies is a nonweighted average of the amounts reported by each institution.

Table IV. Continued

Category: \$5-\$15 Million in Second Mortgages Outstandings										Full Sample	
Total - 9 Responses*										Overall Average	
High			Low		Median**		Average				
	No.	\$	No.	\$	No.	\$	No.++	\$	No.++	\$	
Current and < 60 days	(6)	100.00	100.00	89.3	93.89	98.0	98.3	93.62	97.46	92.96	98.08
60-89 days	(6)	3.0	2.14	0	0	.68	.23	1.84	.73	1.97	.60
90 + days	(6)	7.8	3.97	0	0	1.72	1.61	4.54	1.81	5.06	1.27
60 + days	(6)	10.7	6.11	0	0	1.9	1.70	6.38	2.49	7.04	1.91
Total Unpaid Net Balances Over 60 days	(6)	285,741		0		55,633		97,871		2,527,734	
Charge Offs as % of Avg. Receivables	(4)	2.11%		.04%		.475%		.80%		.76%	
Recoveries as % of Avg. Receivables	(4)	.66%		0%		.26%		.40%		.3%	
Reserve for Losses--% of Year End Receivables	(7)	4.33%		.02%		1.27%		.19%		2.58%	

* The number of useful responses to each survey item is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

++ The average # of delinquent loans is a weighted average/outstanding loans. In contrast, the \$ amount of delinquencies is a nonweighted average of the amounts reported by each institution.

Table IV. Continued

Category: \$20-\$45 Million in Second Mortgages Outstandings										Full Sample	
Total - 9 Responses*											
		High		Low		Median**		Average		Overall Average	
		No.	\$	No.	\$	No.	\$	No.++	\$	No.++	\$
Current and < 60 days	(8)	99.23	99.73	90.32	96.63	97.92	98.27	95.43	98.13	92.96	98.08
60-89 days	(7)	3.2	1.76	0	0	.55	.43	1.22	.59	1.97	.60
90 + days	(7)	6.48	2.83	.34	.13	.92	.815	2.81	1.07	5.06	1.27
60 + days	(8)	9.68	3.37	.77	.27	2.08	1.79	4.57	1.87	7.04	1.91
Total Unpaid Net Balances over 60 days	(8)	1,376,530		172,982		669,930		744,066		2,527,734	
Charge Offs as % of Avg. Receivables	(8)	2.35%		0%		.19%		.64%		.76%	
Recoveries as % of Avg. Receivables	(8)	.91%		0%		.04%		.22%		.3%	
Reserve for Losses--% of Year End Receivables	(9)	3.36%		0%		1.66%		1.56%		2.58%	

* The number of useful responses to each survey item is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

++ The average # of delinquent loans is a weighted average/outstanding loans. In contrast, the \$ amount of delinquencies is a nonweighted average of the amounts reported by each institution.

Table IV. Continued

Category: \$50-\$125 Million in Second Mortgages Outstandings										Full Sample	
		Total - 6 Responses*								Overall Average	
High		Low		Median**		Average					
		No.	\$	No.	\$	No.	\$	No.++	\$	No.++	\$
Current and < 60 days	(6)	99.93	99.90	98.65	98.78	99.65	99.66	99.18	99.56	92.96	98.08
60-89 days	(6)	.37	.27	.02	.01	.19	.18	.26	.15	1.97	.60
90 + days	(6)	.98	.95	0	0	.20	.21	.56	.28	5.06	1.27
60 + days	(6)	1.35	1.22	.07	.1	.30	.36	.82	.43	7.04	1.91
Total Unpaid Net Balances over 60 days	(6)	1,560,052		53,000		234,815		440,108		2,527,734	
Charge Offs as % of Avg. Receivables	(4)	.47%		.1%		.185%		.27%		.76%	
Recoveries as % of Avg. Receivables	(4)	.27%		.006%		.15%		.14%		.3%	
Reserve for Losses-% of Year End Receivables	(5)	1.2%		.27%		1.00%		.80%		2.58%	

* The number of useful responses to each survey is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

++ The average # of delinquent loans is a weighted average/outstanding loans. In contrast, the \$ amount of delinquencies is a nonweighted average of the amounts reported by each institution.

Table IV. Continued

Category: \$199 Million and Over in Second Mortgage Outstandings										Full Sample	
Total - 9 Responses*											
		High		Low		Median**		Average		Overall Average	
		No.	\$	No.	\$	No.	\$	No.++	\$	No.++	\$
Current and < 60 days	(9)	100.00	100.00	96.1	96.59	99.1	99.43	98.27(7)	98.92	92.96	98.08
60-89	(9)	2.52	1.69	0	0	.26	.23	.93(7)	.43	1.97	.60
90 + days	(9)	1.38	3.4	0	0	.38	.45	.80(7)	.64	5.06	1.27
60 + days	(9)	3.90	3.41	0	0	.66	.57	1.73(7)	1.07	7.04	1.91
Total Unpaid Net Balances over 60 days	(9)	269,419		0		51,099		103,748		2,527,734	
Charge Offs as % of Average Receivables	(5)	.38%		0%		.05%		.12%		.76%	
Recoveries as % of Avg. Receivables	(5)	.01%		0%		0%		.004%		.3%	
Reserve for Losses % of Year End Receivables	(9)	4.8%		.56%		1.57%		1.76%		2.58%	

* The number of useful responses to each survey is shown in parentheses by the item.

** For an even number of responses, the median is the average of the middle two.

++ The average # of delinquent loans is a weighted average/outstanding loans. In contrast, the \$ amount of delinquencies is a nonweighted average of the amounts reported by each institution.

APPENDIX

The survey form used to obtain the data summarized in this paper is presented as Exhibit 1. A number of improvements can be made in the survey that would make it more useful in future years.

Our first suggestion is that, while confidentiality should be maintained, boxes should be included in which each survey respondent could indicate whether it was a commercial bank, commercial bank holding company affiliate, mortgage banking company, finance company, or other type of financial institution. This would allow data to be clustered by similar type of institution and would eliminate some disparities that we found in reported costs of funds and leverage ratios. The survey data would probably be more useful to respondents in analyzing their own operations if they could compare their operations more directly to the operations of similar institutions.

Second, it would be most useful if every item of information that related to dollar figures applied only to the principal balances of loans outstanding. If the information did not apply to the principal balance of loan outstandings, but also included unearned finance charges, a box should be provided for respondents to check. They could then indicate the approximate percentage or dollar amounts of unearned finance charges included in the balance reported. If this were done, better pro rata adjustments could be made to eliminate the effect of the inclusion of unearned finance charges in some of the outstanding balance figures.

Third, it should be emphasized throughout the questionnaire that the requested information applies only to the second mortgage loan portion of

each lender's portfolio. this is especially true with respect to operating statistics. If information appropriate to the second mortgage loan portion of the portfolio cannot be provided, overall operating statistics should be provided. However, provision should be made for providing prorated figures, so that overall interest expenses and income, etc., can be allocated appropriately to the second mortgage loan portion of the lender's portfolio.

Fourth, changes need to be made in some of the definitions used in the survey form. The request for "average income" was confusing. Instead, the respondents should have been requested to provide their total gross income for their last fiscal year. Also, they should have been asked to report average 12-month receivables figures for the same fiscal year for which they reported year-end outstandings. Finally, the average net loan receivables figure should have been defined as being equal to the sum of total net receivables outstanding at the end of each reporting month, divided by the number of reporting months included in the last fiscal year. This needs to be emphasized on all surveys.

Finally, data on loan extensions would be more useful if they were reported net of refinancing, as they would more closely reflect true cash flows and growth rates. Further, data on refinancings may be of considerable interest in their own right. They can be used to answer questions regarding the rate of turnover of second mortgage portfolios and indicate whether such mortgages are more frequently being used to provide households with short-term as opposed to long-term financing.

1979 Questionnaire

NATIONAL SECOND MORTGAGE ASSOCIATION
in cooperation with
CREDIT RESEARCH CENTER, PURDUE UNIVERSITY

FINANCIAL QUESTIONNAIRE

Identifying number of firm: _____
(Assigned by NSMA)

This questionnaire applies to entities engaged in making loans secured principally by junior liens on real property.

Complete questionnaire and send in the enclosed, self-addressed envelope by to:

Dr. Richard L. Peterson
Senior Research Associate
Credit Research Center
Krannert Graduate School of Management
Purdue University
West Lafayette, Indiana 47907

The responses to the questionnaires will be summarized by the staff of the Credit Research Center under the direction of Dr. Peterson and will remain confidential. Results will be reported to participants in a composite format.

Any questions regarding the completion of this questionnaire should be directed to Dr. Peterson at the above address or by telephone (317) 494-6173.

QUESTIONNAIREInstructions

1. Show dollar figures to the nearest \$1,000.
2. See definitions at the end of the questionnaire.

The following information is for the fiscal year ended _____
(specify date)

I. Volume indicators

	<u>Number</u>	<u>Amount</u> <u>\$(-000)</u>
1. Net loans receivable outstanding and owned at end of fiscal year shown above	_____	_____
2. Net loans receivable outstanding at end of fiscal year that are serviced, but not owned	_____	_____
3. Volume of loans originated during the preceding 12 months	_____	_____
4. Volume of loans purchased during the preceding 12 months	_____	_____
5. Volume of loans sold to other than affiliated company during the preceding 12 months	_____	_____
6. Average net loans receivable	X X X X X	_____

II. Contractual Delinquencies and charge-offs

7. Contractual Analysis (Based on terms in effect at statement date and applicable to precompute, add-on, discount, and interest bearing accounts)

<u>Accounts current and with instalments past due less than 60 days from due date</u>	<u>Number</u>	<u>Unpaid Balances</u>	<u>% of Related Receivables Outstanding</u>
60 - 89 days			
90 - 179 days			
180 to 269 days			
270 days or more			
<u>TOTAL</u>			

- | | <u>Number</u> | <u>Amount</u>
<u>\$(-000)</u> |
|---|---------------|----------------------------------|
| 8. What portion of a full payment must be received in order that the payment be recognized as received in making the computation above? <u>If less than 100% of full payment required, would this be true on consecutive payments or limited to just the most recent?</u> | | |
| 9. How many consecutive full payments must be received for the purpose of taking an account off the contractual list? | | |
| 10. Gross charge-offs during fiscal year | x x x x x | _____ |
| 11. Recoveries during fiscal year | x x x x x | _____ |
| 12. Allowance for possible loan losses at end of fiscal year | x x x x x | _____ |

III. Sources of funds and profitability

- | | |
|---|-------|
| 13. Average borrowings during fiscal year | _____ |
| 14. Average stockholders' equity during fiscal year | _____ |
| 15. Interest expense for the fiscal year | _____ |
| 16. Average gross interest income for the fiscal year | _____ |
| 17. Income before income taxes for the fiscal year | _____ |

IV. Operating policies

These data should be reported for the quarter ending with the end of the fiscal year shown on the previous page. The data reported should relate to originated loans only, not purchased loans.

- | | | |
|---|-------|--------|
| 18. Number and dollar volume of loans originated for personal, family, or household purposes during quarter. | _____ | _____ |
| 19. Number and dollar volume of loans originated for other than consumer purposes | _____ | _____ |
| 20. Number and total dollar volume of loans originated during the quarter (should be equal to sum of #18 and #19) | _____ | _____ |
| 21. With respect to <u>consumer loans</u> : | | |
| a. Average ratio of loan to appraised equity: | _____ | % |
| b. Average maturity: | _____ | months |

THANK YOU FOR YOUR COOPERATION. Comments and suggestions for improvement would be welcome.

PUBLICATIONS
CREDIT RESEARCH CENTER

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- MONOGRAPH No. 2: Credit Policies and Store Locations in Arkansas Border Cities: Merchant Reactions to a Ten Percent Finance Charge Ceiling
- MONOGRAPH No. 3: Research Topics in Mortgage Markets: Proceedings of a Seminar
- MONOGRAPH No. 4: An Economic Report on Consumer Lending in Texas
- MONOGRAPH No. 5: Mortgage Banking 1963 to 1972: A Financial Intermediary in Transition
- MONOGRAPH No. 6: A Thesaurus of Terms in Mortgage and Consumer Credit
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- MONOGRAPH No. 8: A Compilation of Federal and State Laws Regulating Consumer Financial Services
- MONOGRAPH No. 10: The Impact of Regulation on the Provision of Consumer Financial Services by Depository Institutions: Research Backgrounds and Needs
- MONOGRAPH No. 12: Cost/Benefit Analysis of Creditors' Remedies
- MONOGRAPH No. 13: Consumer Perception of Credit Insurance on Retail Purchases
- MONOGRAPH No. 14: An Economic Analysis of the "Due On Sale" Clause in the California Mortgage Market
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